

CIVIL GEOTECHNICAL SERVICES ABN 26 474 013 724 PO Box 678 Croydon Vic 3136 Telephone: 9723 0744 Facsimile: 9723 0799

1st May 2023

Our Reference: 22561:NB1534

Winslow Constructors Pty Ltd 50 Barry Road CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING GRACE – STAGE 8 (TARNEIT)

Please find attached our Report No's 22561/R001 to 22561/R009 which relate to the field density testing that was conducted within the filled allotments at the above subdivision. The level 1 inspections and associated field density testing was performed in August 2022.

The inspections and testing of the earthworks was undertaken in general accordance with the Level 1 requirements of AS 3798 - Guidelines on Earthworks for Commercial and Residential Developments.

The site inspection and testing was performed by experienced geotechnicians from this office. Any areas that were deemed unsatisfactory were reworked and retested under their supervision. The testing was performed to the relevant Australian Standards and the accompanying test reports carry NATA endorsement. The attached compaction results, which were located randomly throughout the fill profile, are considered to be representative of the bulk fill materials that were placed across the reported allotments by Winslow Constructors during the aforementioned period. The approximate locations of the field density tests can be seen on the attached plan (Figure 1).

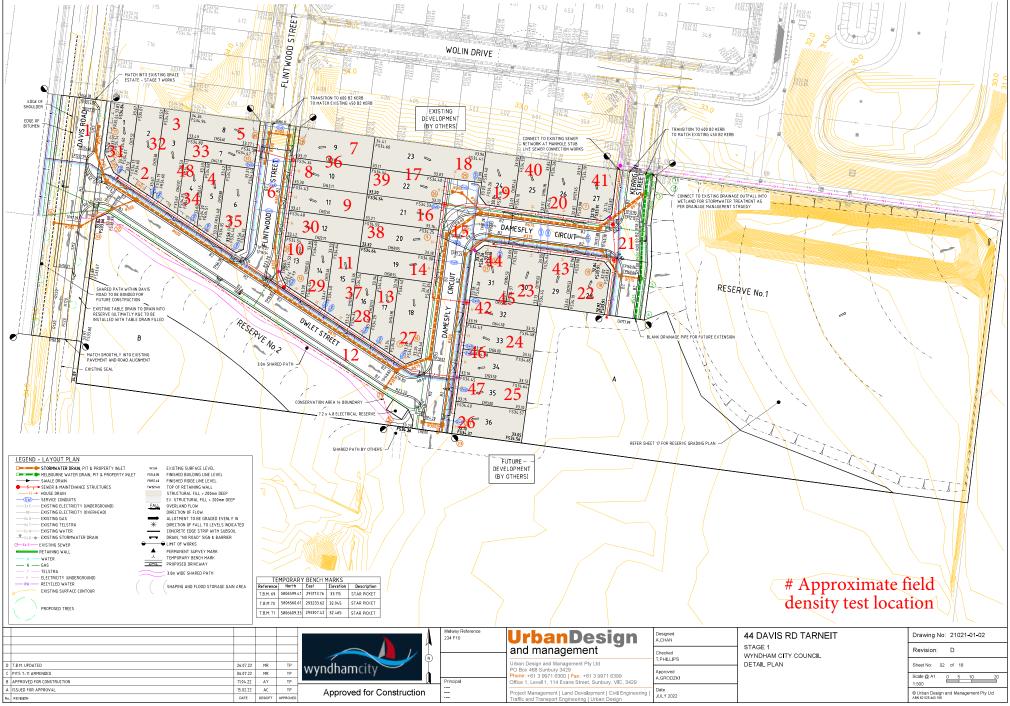
We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

Nick Brock

FIGURE 1



file name 21021-01-02.dwo lavout name 02 file location L:\Work\Eng\21021 44 Davis Rd Tarniet\ General\Drawings



Test procedure AS 1289.2.1.1 Test No Location Approximate depth below FSL	8	``````````````````````````````````````	er thickness 2 REFER TO	ELD) 200 3 REFER	Da Cł mm 4	ested by ate tested aecked by Time: 5	JB 10/08/22 JHF 12:00 6
Feature EARTHWORKS Test procedure AS 1289.2.1.1 Test No Location Approximate depth below FSL Measurement depth	& 5.8.1	1 REFER TO	2 REFER TO	3	4		
Test No Location Approximate depth below FSL	& 5.8.1	REFER TO	REFER TO	_		5	6
Location Approximate depth below FSL		REFER TO	REFER TO	_		5	6
Approximate depth below FSL		то	ТО	REFER			
			FIGURE 1	TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1
Measurement depth							
•	mm	175	175	175	175	175	175
Field wet density Field moisture content	<u>t/m³</u> %	1.92 32.7	1.91 28.2	1.90 28.1	1.93 27.6	1.93 25.6	1.90 27.0
Test procedure AS 1289.5.7.1 Test No Compactive effort		1	2	3 Stan	4 dard	5	6
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0	0
Peak Converted Wet Density	t∕m³	1.94	1.94	1.94	1.94	1.98	1.94
Adjusted Peak Converted Wet De	ensity t/m³	-	-	-	-	-	-
Optimum Moisture Content	%	34.5	30.0	31.0	30.0	26.5	29.5
Moisture Variation From		1.5%	1.5%	2.5%	2.5%	0.5%	2.5%
Optimum Moisture Conten density and moisture ratio r		dry only to the so	dry il to the deptl	dry h of test and	dry not to the ful	dry I depth of the	dry e layer
Density Ratio (R _{HD})	%	99.0	98.5	98.5	99.5	98.0	98.0



Approved Signatory : Justin Fry



CIVIL GEOTEC	HNICAL SERVICES	Job No Report No	22561 22561/R002
6 - 8 Rose Avenue	e, Croydon 3136	Date Issued	17/08/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 8	Date tested	11/08/22
Location	TARNEIT	Checked by	JHF

 Feature
 EARTHWORKS
 Layer thickness
 200 mm
 Time: 09:00

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		7	8	9	10	11	12
Location		REFER TO FIGURE 1	8 REFER TO FIGURE 1	9 REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1
Approximate depth below FSL							
Measurement depth	тт	175	175	175	175	175	175
Field wet density	t∕m³	1.94	1.91	1.89	1.94	1.94	1.96
Field moisture content	%	22.9	20.9	19.2	22.8	24.0	23.5
Test No Compactive effort		7	8	9 Star	10 dard	11	12
Oversize rock retained on sieve	тт	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0	0
Peak Converted Wet Density	t∕m³	1.99	1.94	1.95	1.95	1.98	2.00
Adjusted Peak Converted Wet Density	t∕m³	-	-	-	-	-	-
Optimum Moisture Content	%	25.5	23.5	22.0	25.5	26.5	26.0
Moisture Variation From		2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
		dry	dry	dry	dry	dry	dry
Optimum Moisture Content							
density and moisture ratio results	relate c	only to the so	il to the dept	h of test and	not to the ful	I depth of the	e layer

Material description

No 7 - 12 Clay Fill



NATA Accredited Laboratory No 9909 Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



8 Rose Avenue, 0 Client \ Project 0	VICAL SERVICES Croydon 3136 WINSLOW CONSTRUC ⁻ GRACE - STAGE 8 TARNEIT	TORS	PTY LTD (C/	AMPBELLFIE	ELD)	Da Te Da	eport No ate Issued ested by ate tested necked by	22561/R00 17/08/2022 JB 12/08/22 JHF
Feature E	EARTHWORKS		Lay	er thickness	200	mm	Time:	09:30
	e AS 1289.2.1.1 & 5.8.	1						
Test No			13	14	15	16	17	18
Location			REFER TO FIGURE 1	REFER TO FIGURE 1				
Approximate de	oth below FSL							
Measurement d		mm	175	175	175	175	175	175
Field wet densit		t∕m³	1.88	1.90	1.92	1.92	1.87	1.88
Field moisture c	content	%	23.4	22.9	26.7	27.1	25.9	29.9
Test No	e AS 1289.5.7.1		13	14	15	16	17	18
Compactive effo	a ref		13	14	-	dard	17	10
	etained on sieve	mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of overs		wet	0	0	0	0	0	0
Peak Converted		t/m ³	1.92	1.94	1.95	1.94	1.96	1.92
	Converted Wet Density	t/m³	1.32	1.34	1.95	1.34	1.90	1.32
Optimum Moistu		<u>////-</u> %	- 25.5	- 25.5	- 29.0	- 30.0	29.0	33.0
Optimum Moiste		70	20.0	20.0	23.0	50.0	29.0	55.0
Moistur	e Variation From		2.0%	2.5%	2.5%	2.5%	2.5%	2.5%
	Moisture Content		dry	dry	dry	dry	dry	dry
	nd moisture ratio results	relate d						
-		%	97.5	98.0	98.5	99.0	95.5	98.0
Density Ratio	(R _{HD})	%	97.5	90.0	90.5	99.0	95.5	90.0



Approved Signatory : Justin Fry



8 Rose Avenue, (IICAL SERVICES Croydon 3136 WINSLOW CONSTRUC ⁻				ח ו	D	eport No ate Issued ested by	22561/R00 22/08/2022 JB
Project (GRACE - STAGE 8 FARNEIT					D	ate tested hecked by	13/08/22 JHF
Feature I	EARTHWORKS		Lay	er thickness	200	mm	Time:	07:30
Test procedure	ə AS 1289.2.1.1 & 5.8.	1						
Test No			19	20	21	22	23	24
Location			REFER TO FIGURE 1	REFER TO FIGURE 1				
Approximate de								475
Measurement d	•	mm	175	175	175	175	175	175
Field wet densit		t/m³ %	1.88 23.2	1.95 27.5	1.95 24.4	1.95 29.9	1.86 25.7	1.91 28.9
, Test No Compactive effo	e AS 1289.5.7.1		19	20	21 Stan	22 dard	23	24
Oversize rock re	etained on sieve	тт	19.0	19.0	19.0	19.0	19.0	19.0
Percent of overs	size material	wet	0	0	0	0	0	0
Peak Converted		t∕m³	1.93	1.99	1.99	1.99	1.93	1.94
	Converted Wet Density	t∕m³	-	-	-	-	-	-
Optimum Moistu	ire Content	%	26.0	30.0	26.5	31.5	28.5	31.0
Moisture	e Variation From		2.5%	2.0%	2.0%	1.5%	2.5%	2.0%
Optimum	Moisture Content		dry	dry	dry	dry	dry	dry
density ar	nd moisture ratio results	relate c	only to the so	il to the deptl	n of test and	not to the fu	all depth of the	e layer
	(R _{HD})	%	97.5	98.0	98.5	98.5	96.0	98.5

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8 Rose Avenue,	NICAL SERVICES Croydon 3136 WINSLOW CONSTRUC	TORS	PTY LTD (CA		ED)	Ľ	Report No Date Issued Tested by	22561/R00 22/08/2022 JB
Project	GRACE - STAGE 8 TARNEIT					E	Date tested Checked by	15/08/22 JHF
Feature	EARTHWORKS		Lay	er thickness	200	mm	Time:	13:01
Test procedui	re AS 1289.2.1.1 & 5.8.	1						
Test No			25	26	27	28	29	30
Location			REFER TO FIGURE 1	REFER TO FIGURE 1				
	epth below FSL							
Measurement o	-	mm	175	175	175	175	175	175
Field wet densi Field moisture	,	t/m³ %	2.00 29.0	1.99 27.3	1.90 27.8	1.89 28.3	1.93 26.9	1.81 25.7
Test No Compactive eff	re AS 1289.5.7.1		25	26	27 Star	28 Idard	29	30
	etained on sieve	тт	19.0	19.0	19.0	19.0	19.0	19.0
Percent of over		wet	0	0	0	0	0	0
Peak Converte	-	t/m³	2.02	2.02	1.94	2.03	1.94	1.86
	Converted Wet Density	t/m³	-	-	-	-	-	-
Optimum Moist	ure Content	%	31.0	30.5	30.0	31.0	29.5	28.5
			0.00/	a a (0.00/	0.00/	0.50(0.50/
	re Variation From		2.0%	2.5%	2.0%	2.0%	2.5%	2.5%
•	n Moisture Content nd moisture ratio results	relate c	dry	dry il to the depti	dry h of test and	dry not to the fi	dry	dry
uchony u		%	98.5	99.0	98.0	93.5	99.5	97.5
Density Ratio					90.0	95.5	99.0	97.5



Approved Signatory : Justin Fry



CIVIL GEOTE	CHNICAL SERVICES	Job No Report No	22561 22561/R006
6 - 8 Rose Aven	ue, Croydon 3136	Date Issued	19/08/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 8	Date tested	16/08/22
Location	TARNEIT	Checked by	JHF

 Feature
 EARTHWORKS
 Layer thickness
 200 mm
 Time: 12:00

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		31	32	33	34	35	36
Location							
		REFER	REFER	REFER	REFER	REFER	REFER
	l	то	то	то	то	то	то
		FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t∕m³	2.07	2.09	1.98	1.95	2.10	2.03
Field moisture content	%	24.4	25.7	23.6	24.6	23.8	23.1
Test No Compactive effort		31	32	33 Stan	34 dard	35	36
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0	0
Peak Converted Wet Density	t/m ³	2.08	2.10	2.00	1.99	2.14	2.05
Adjusted Peak Converted Wet Density	t/m³	-	-	-	-	-	-
Optimum Moisture Content	%	27.0	28.5	25.5	27.0	26.0	26.0
				1		I	
Moisture Variation From		2.5%	2.5%	2.0%	2.5%	2.0%	2.5%
Optimum Moisture Content		dry	dry	dry	dry	dry	dry
density and moisture ratio results	relate c	only to the so	il to the dept	h of test and	not to the ful	I depth of the	ayer
	%	99.5	99.5	98.5	98.0	98.0	99.0

Material description

No 31 - 36 Clay Fill



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CIVIL GEOTEC	CHNICAL SERVICES	Job No Report No	22561 22561/R007
6 - 8 Rose Avenu	ie, Croydon 3136	Date Issued	19/08/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 8	Date tested	17/08/22
Location	TARNEIT	Checked by	JHF

Feature

EARTHWORKS

Layer thickness

200 mm

Time: 13:00

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		37	38	39	- '	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL		'	'	├ ───┦	[]	 	<u> </u>
Measurement depth	тт	175	175	175		-	-
Field wet density	t∕m³	1.93	1.98	1.89	·		
Field moisture content	%	20.8	20.5	21.2	-	-	-
Test No Compactive effort		37	38	39 Stan	- ndard	-	-
•	'	<u> </u>					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-	-
Percent of oversize material Peak Converted Wet Density	wet t/m³	0 1.95	0 2.00	0 1.92	'	-	
Adjusted Peak Converted Wet Density	t/m³ t/m³	1.90	2.00	1.92	<u>⊢ -</u> ′	-	-
Optimum Moisture Content	<i>v</i> ///*	23.5	22.5	24.0	-	-	-
Moisture Variation From Optimum Moisture Content density and moisture ratio results r		2.5% dry	2.0% dry	2.5% dry	-	-	
		-	-				, layei
Density Ratio (R _{HD})	%	99.0	99.0	98.5	1 - '	(- '	- 1

Material description

No 37 - 39 Clay Fill



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Approved Signatory : Justin Fry



CIVIL GEOTE	CHNICAL SERVICES	Job No Report No	22561 22561/R008
6 - 8 Rose Aven	ue, Croydon 3136	Date Issued	22/08/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 8	Date tested	18/08/22
Location	TARNEIT	Checked by	JHF

Feature EARTHW

EARTHWORKS

Layer thickness

200 mm

Time: 12:00

Test procedure AS 1289.2.1.1 & 5.8.1

		40	41	42	43	44	45
Location							
		REFER	REFER	REFER	REFER	REFER	REFER
		то	то	то	то	то	то
		FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t∕m³	2.00	1.96	1.94	2.08	2.02	1.98
Field moisture content	%	22.8	22.1	20.1	20.1	19.5	20.6
Test procedure AS 1289.5.7.1				•			
Test No		40	41	42	43	44	45
Test No Compactive effort				Star	idard		
Test No Compactive effort Oversize rock retained on sieve	mm	19.0	19.0	Star 19.0	idard 19.0	19.0	19.0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	mm wet		19.0 0	Star	idard	19.0 0	
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	wet t/m³	19.0	19.0	Star 19.0	idard 19.0	19.0	19.0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	wet	19.0 0	19.0 0	Star 19.0 0	dard 19.0 0	19.0 0	19.0 0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	wet t/m³	19.0 0	19.0 0	Star 19.0 0	dard 19.0 0	19.0 0	19.0 0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	wet t/m³ t/m³	19.0 0 2.04 -	19.0 0 2.00 -	Star 19.0 0 1.98 -	dard 19.0 0 2.11	19.0 0 2.05	19.0 0 2.01
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	wet t/m³ t/m³	19.0 0 2.04 -	19.0 0 2.00 -	Star 19.0 0 1.98 -	dard 19.0 0 2.11	19.0 0 2.05	19.0 0 2.01 -
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density Optimum Moisture Content	wet t/m³ t/m³	19.0 0 2.04 - 25.0	19.0 0 2.00 - 23.5	Star 19.0 0 1.98 - 22.5	idard 19.0 0 2.11 - 21.0	19.0 0 2.05 - 22.0	19.0 0 2.01 - 23.0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density Optimum Moisture Content Moisture Variation From	wet t/m³ t/m³ %	19.0 0 2.04 - 25.0 2.0% dry	19.0 0 2.00 - 23.5 1.5% dry	Star 19.0 0 1.98 - 22.5 2.0% dry	19.0 0 2.11 - 21.0 1.0% dry	19.0 0 2.05 - 22.0 2.5% dry	19.0 0 2.01 - 23.0 2.5% dry

Material description

No 40 - 45 Clay Fill



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Approved Signatory : Justin Fry



CIVIL GEOTECHNICAL SERVICES		Job No Report No	22561 22561/R009
6 - 8 Rose Avenue, Croydon 3136		Date Issued	22/08/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 8	Date tested	19/08/22
Location	TARNEIT	Checked by	JHF

Feature

EARTHWORKS

Layer thickness

200 mm

Time: 13:00

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		46	47	48	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL							
Measurement depth		175	175	175	-	-	-
Field wet density		1.94	2.02	2.05	-	-	-
Field moisture content	%	20.7	19.8	20.0	-	-	-
Test procedure AS 1289.5.7.1 Test No Compactive effort		46	47	48 Stan	- dard	-	-
Oversize rock retained on sieve mm		Standard 19.0 19.0					
Percent of oversize material	wet	0	0	0	-	-	_
Peak Converted Wet Density		1.99	2.03	2.05	-	-	_
Adjusted Peak Converted Wet Density		-	-	-	-	-	-
Optimum Moisture Content	t/m³ %	23.0	22.0	22.5	-	-	-
Moisture Variation From		2.0%	2.0%	2.5%	_		_
Optimum Moisture Content		dry	dry	dry	-	-	_
1	roloto d	· · ·	,		not to the ful	l donth of the	
density and moisture ratio results		-	-			i depiri or the	e iayei
Density Ratio (R _{HD}) %		97.5	99.5	100.0	-	-	-

Material description

No 46 - 48 Clay Fill



NATA Accredited Laboratory No 9909 Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry